

Chapter 17

Person-Centered Prevention



Salman Rawaf, Celine Tabche, George N. Christodoulou, David Rawaf, and Harumi Quezada-Yamamoto

17.1 Introduction

Identifying novel and more effective intervention strategies in health and healthcare are needed because disability has become an increasing component of disease burden, significant research, development investment, and health expenditure in recent years [1]. With population growth and the rapidly ageing global population, the demands on health services to deal with disabling outcomes will require policymakers to anticipate the magnitude of these changes. Furthermore, the Coronavirus SARS-Cov-2, the causative agent of COVID-19, has changed most if not all of our public health approaches to prevention. During this pandemic, public health developments, including precision public health, were another milestone in this speciality's history [2].

Benefiting the most significant number of people through preventing disease, prolonging life, and promoting health should be the mission of all healthcare workers. This strategy requires collaboration between health leaders involved in education, politics, businesses, and charities. The Robert Wood Johnson Foundation in

S. Rawaf (✉) · C. Tabche · D. Rawaf · H. Quezada-Yamamoto
WHO Collaborating Centre, Department of Primary Care and Public Health,
Imperial College London, London, UK
e-mail: s.rawaf@imperial.ac.uk; c.tabche20@imperial.ac.uk; d.rawaf@imperial.ac.uk;
hq4717@imperial.ac.uk

G. N. Christodoulou
Department of Psychiatry, Society of Preventive Psychiatry, Athens University,
Athens, Greece

World Psychiatric Association, Geneva, Switzerland

World Federation for Mental Health, Occoquan, VA, USA

Hellenic Psychiatric Association, Athens, Greece

International College of Psychosomatic Medicine, Florence, Italy

International College of Person Centered Medicine, New York, NY, USA

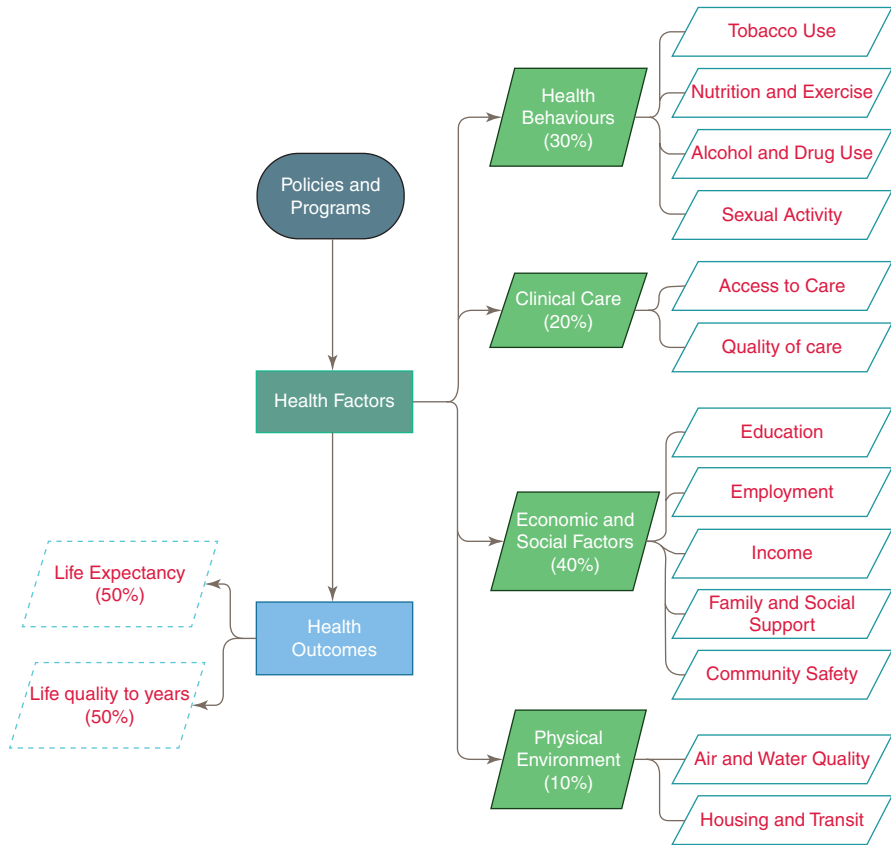


Fig. 17.1 True population health management

2014 described the management of proper population health through a diagram which was slightly edited for this chapter to fit current trends (See Fig. 17.1) [3].

Figure 17.1 clearly illustrates how the health factors are divided and what health systems need to achieve the ultimate goals of adding years to life and improving quality of life by adding life to years. The concept of prevention can be understood more clearly when explained by the fact that the fate of population health management falls on the changes in policies and programs. Prevention covers two core levels: community and person. Community prevention addresses social, economic, and physical environmental factors, while person-centred prevention focuses on individual health, behaviours, and clinical care. While these factors may flow and overlap between the two main levels, community, and person-centred prevention, they represent the general understanding of health systems and how to move forward with any prevention policy.

The outstanding results of small advances in prevention can be seen through history. Dating back to the fifth century BC, the Greek father of medicine, Hippocrates, has an aphorism attributed to him, *“It is more important to know what sort of person has a disease than to know what sort of disease a person has”*. He distinguished

personal characteristics and lifestyle patterns from disease symptoms experienced by the individual. Hippocratic therapies mainly focused on changes in exercise, food, and lifestyle patterns that include sleep, baths, sexual practice, and other habits [4].

The nineteenth century presented one of the most symbolic examples of prevention during the cholera epidemics in London. Around 50,000 deaths were reported per season, which is approximately 20 per 1000 individuals in the population at the time [5]. Doctor John Snow had kept records of patients with the disease, trying to figure out the common factor between them. As a result, he realised that all cases had direct contact with water or food contaminated with water from the Broad Street Pump in Soho. It was unnecessary to know all the facts about cholera before taking preventative public health action that targeted individual homes and routines. The pathogen *vibrio cholera* was not discovered for another 30 years.

Another example is that of James Lind who used lime juice to prevent scurvy when ascorbic acid's chemical pathway had not yet been discovered. Typhoid and paratyphoid provide another successful story of prevention. The provision of safe water supply, sanitation, and further measures to ensure food safety (dairy, fish, etc.) by the end of the nineteenth century, led to enteric fever being rare in England and Wales nowadays [6]. More recently, vaccines have played a significant role in prevention and particularly during the twentieth century. Diseases such as polio, tetanus, rubella, measles, whooping cough, and diphtheria are rarely seen by doctors today while smallpox has been eradicated [7]. The reduction of maternal mortality can also be attributed to prevention [8].

From the use of gloves and other public health techniques to higher professional standards among doctors and other health professionals, legislative and administrative mechanisms, prevention has been the main reason some diseases have been avoided or eradicated. Prevention requires a nationally led drive that makes people the priority instead of the system; this can help reduce lifestyle causes of poor health and target those with the highest risks of ill health. The users', carers', and families' priorities should be critical points to organise health services. Carer, voluntary, and community sectors contribute massively to help individuals and support prevention services. Therefore, their input is vital to design and provide person-centred care. Equally as important is the government's ability to secure the funding for this activity and increase public financing because, without this source, any policy's goals will be unachievable [9]. This central notion leads to the role of public health as described by the Centers for Disease Control and Prevention (CDC). There are ten essential services provided through the role of public health that link all healthcare processes and allow policy development to improve the community's health (See Fig. 17.2) [10].

It is important to note that research is a critical element of assessment, policy development, and assurance, which has not been highlighted in the figure produced by the CDC in 2020. Research is the only route that brings beneficial real-world evidence to the legislative process, allowing policy change and development. The main goal for the CDC in Fig. 17.2 was to achieve optimal

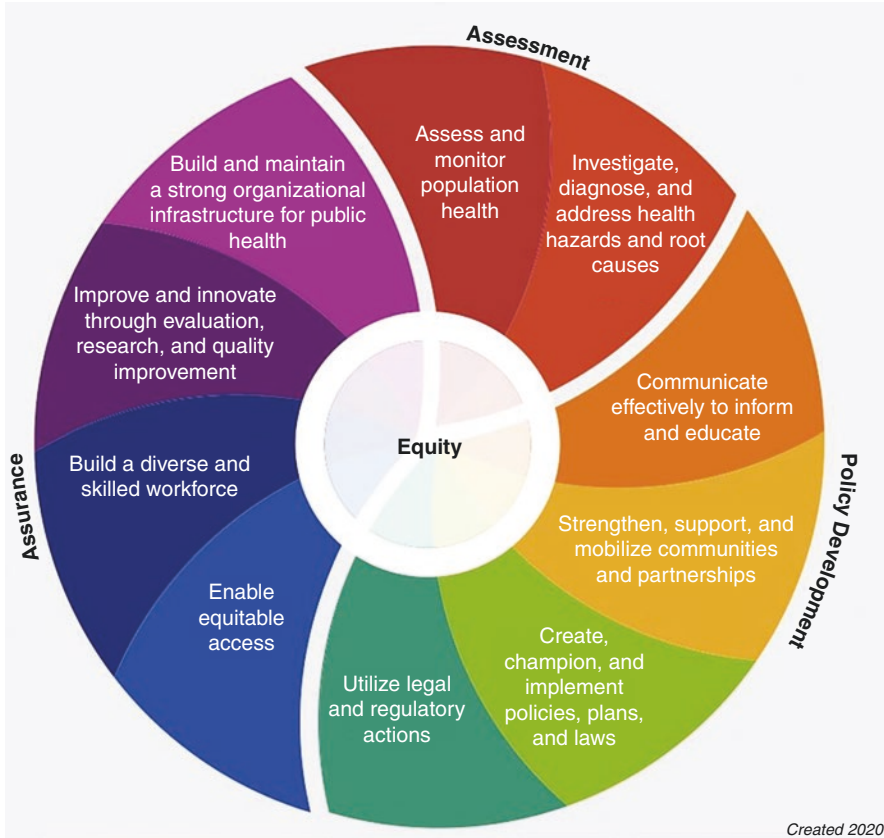


Fig. 17.2 Ten essential public health services. (Source: CDC—10 Essential Public Health Services—CSTLTS [10])

equity while removing obstacles that might result in health prejudice. Moreover, these public health services will help draw out proper disease prevention strategies and be key pillars for health systems and policymakers in individual and population health improvements.

Every year, it is more evident that we need to shift away from the traditional models of care to a tactic focused on self-care, empowerment, and prevention on the grounds of efficiency. Community-based services, for example, can deliver preventive support for people with chronic conditions. Patient empowerment is achieved through self-care with action plans, support, and follow-up in primary care rather than secondary care [11]. Patient involvement in prevention has become a priority in the policy agenda and is connected with the system's transformation. Now that the basic understanding of the person-centred prevention approach has been discussed, prevention recommendations will be tackled along with their unique characteristics and challenges.

17.2 The Knowledge Base of Person-Centred Prevention

17.2.1 Prevention Vs Curative Approach

The emphasis on prevention starts simultaneously at every level of care: primary, secondary, and tertiary. The target can be as big as the whole population, a specific group in the population, and can also be delivered to one person on a one-to-one basis. It is important to note that the disease model typically focuses on the individual instead of targeting the larger group. Also, it tends to jump in with a cure after the problem has struck the individual and affected them physically, mentally, and financially. This model can be reformed through primary care, hospitals, state's decisions, and international organisations [12]. At the population level, measures were taken previously similar to the water fluoridation decision, where 1 mg of fluoride was added per litre of water. Fluoridation was introduced to the USA and UK in the early twentieth century to reduce tooth decay by 1970; fluoride was also added to toothpaste [13]. Another measure taken due to the iodine deficiency was salt iodisation [14].

For a specific group in a population, like the elderly or children, measures can be taken similar to those taken during the COVID-19 lockdown. The Royal Society for the Prevention of Accidents (RoSPA) aimed to reduce the pressure on the health service because almost 17,000 unintentional injury hospital admissions happen per year in Northern Ireland. They started encouraging and campaigning for an accident-free home by changing the house's design and removing objects from the child's reach [15]. In the elderly population, preventive measures can avert falls, accidents, and related injuries, reducing the burden on healthcare systems [16].

At the level of person-centred prevention, it starts with the person and their capabilities which includes their medical condition, physiology, and carer focus. Person-centred prevention should encompass some main principles like understanding the patients' goals with respect and maintaining confidentiality. Empowering the patient through communication, participation, and education is another main principle that supports this approach while always creating accessible resources. For example, the CDC has placed new goals for early detection of dementia by 2023; local public health agencies will prepare all communities by changing the environment, systems, and policies. One of the developed actions, E-1, talks about educating the families and public about all cognitive and brain health age-related issues and the benefits of early detection and diagnosis [17]. Person-centred prevention can be incorporated into primary, secondary, and tertiary care through the practitioners, community, state, and international organisations contribution.

17.2.1.1 Primary Prevention

The WHO and UNICEF have defined primary health care as *“a whole-of-society approach to health that aims at ensuring the highest possible level of health and well-being and their equitable distribution by focusing on people's needs and as*

early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation, and palliative care, and as close as feasible to people's everyday environment" [18].

These organisations have identified what modification is needed for the health systems to truly hold the universal health coverage (UHC) principles. This shift highlights the importance of a government's support beyond the health sector on all levels. The health systems switch from being designed around the organisations and disease and start working towards being developed with the people for the people. It provides quality, inclusive care throughout one's lifespan instead of being just for specific diseases. This care ranges from promotion and prevention to treatment, rehabilitation, and palliative care. The leading role of doctors is to prevent disease as part of their Good Medical Practice [19]. They should always put patient care as their first concern. They have significant opportunities to educate the general public about preventable diseases and avoidable deaths, such as type 2 diabetes, heart disease, and some types of cancer. This teaching process is a form of patient empowerment that can lead to great results in prevention.

Community's role in primary care prevention: These community-based programs in primary care settings are created and tailored to receive optimal outcomes in the area. For example, a nutrition program delivered on services for pregnant and lactating women similar to the one done in India called Tamil Nadu Integrated Nutrition Program [20]. This program was done to educate and empower local women on resources to prevent malnutrition and improve maternal and child health. The integration of community care into primary care prevention is essential for effectiveness, sustainability, and longevity of health systems.

The state's role in legislation and enforcement has a massive influence on prevention, such as the seat belt, mobile phones in cars, road taxation for maintenance, and the crash barrier laws which has also been cost-effective to any state which has enforced these rules [21]. During the COVID-19 pandemic, governmental surveillance, monitoring, and prevention measures have proven to be essential for all health systems worldwide; practitioners in primary care could not have done it on their own [22]. The state should be approached by public health organisations and professionals in primary care with economic and political evidence on how policy changes can benefit the individual and the nation. This step requires research and data collection to draw out evidence-based conclusions and policies on a solid foundation in primary care.

International institutions' role in prevention, such as the International Health Regulations, protects against disease at a personal and community level. Their COVID-19 position was evident by declaring a global pandemic and supporting countries worldwide with policies and guidelines to keep the population safe, even though one could argue that the decisions on the vaccination process have not been the best globally [23]. However, enforcing lockdown, social distancing, and travel restrictions were public health measures dependent on individuals. These measures have helped everyone in the healthcare system by reducing the pressure on primary care and the wider public health workforce [24].

17.2.1.2 Secondary and Tertiary Prevention

Secondary prevention highlights early disease detection where healthy-looking individuals are the main target with underlying forms of the disease; hence, no overt symptoms are present, which is also known as asymptomatic individuals. Therefore, screening is the focus of secondary prevention, as seen in some cases during the COVID-19 pandemic. Both the medical and outcome stages of a disease are focused on tertiary care prevention. It aims to lessen the severity of the disease in symptomatic patients. While secondary prevention seeks to detect a disease early and prevent deterioration, tertiary prevention seeks to reduce the effects of established disease in an individual, improve quality of life, and reduce symptoms. Ordinarily, rehabilitation work is also a form of tertiary prevention for patients.

Hospital's role in prevention can be done during consultations to identify the risk in the patient and link them to the corresponding clinic that can deal with the patient's situation to avoid any future complications. For example, someone admitted with heart problems who might have inadequate knowledge about nutrition, alcohol consumption, or smoking should be referred to a clinic that educates them on these topics to try and avoid any future predictable complications.

The specialist's role is to make sure diseases do not progress to damage or cause long-term disabilities to patients. This control can be presented in diabetes and corresponding complications resulting from high cholesterol, high blood pressure, neuropathy, etc. The patients admitted into hospitals are given a care plan to prevent further obstacles in that particular disease and a rehabilitation plan to maintain their current normal state with disabilities.

The examples mentioned above show how prevention can be person-centred instead of prioritising the system and the disease. Policies need to be changed to empower the patient and the public to make sure more diseases can be avoided. Hence, the interacting themes (See Fig. 17.3) in person-centred care and prevention are health, education, legislation, and sustainability to reach a better future for all.

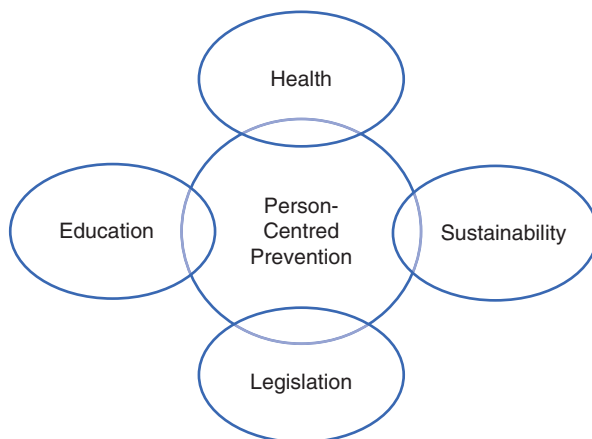


Fig. 17.3 Interacting themes

17.2.1.3 Person-Centred Prevention in Psychiatry

The application of the principles and methods of Prevention in Psychiatry is crucial not only because of the ancient and wise dictum “prevention is better than treatment” (as exemplified in the Hippocratic Oath where Hygeia, the Goddess of Preventive Medicine, is mentioned before Panacea, the Goddess of Therapeutic Medicine) but also because of evidence derived from the WHO indicating that in many countries “as much as one third to one-half of all mental and neurological disorders could be averted by primary prevention methods” [25].

The person-centred perspective is, of course, more relevant when applied in clinical practice and preventive lifestyle practices. However, person-centred psychiatry recognises the person in the singular and in the plural (i.e., as people in society) [26]; therefore, public health preventive practices also, are within the context of person-centred prevention.

Regarding clinical practice and, more specifically, diagnosis, the inclusion of a personalised (or idiographic) formulation and the standardized diagnosis is characteristic of the emerging person-centred trend [27]. Primary Psychiatric Prevention is, of course, prevention “par excellence” and involves the person even before its birth (as is the case with genetic psychiatric counselling). Secondary prevention involves screening for emerging psychopathological symptoms such as precursors of schizophrenic symptoms in adolescence or symptoms and signs indicative of increased suicidal risk. Tertiary prevention has been the focus of attention in the last years. Following the introduction of effective medication, it has been possible to de-institutionalise persons with severe psychopathology and thus avoid the long-term effects of the illnesses themselves and the deleterious effects of how the patients were kept and treated (institutionalisation).

For further reference, please find the two chapters that discuss Person-centred Prevention in Psychiatry and Person-centred Mental Health Promotion and Public Health Perspectives in the Person-centred Psychiatry book published in 2016 [28, 29].

17.2.2 *The Added Value*

It should suffice to say that prevention will decrease the number of new patients and reduce the cases of people who are already suffering, translating into a reduced workload for the practitioners and the whole health system. Furthermore, health services are costly to the state and individuals, and their effectiveness must be justified and guaranteed. In some instances, prevention has been proven to be cost-saving and cost-effective in the long run [30]. Cost reduction due to prevention encompasses fewer admissions, fewer referrals, and in consequence, decreased curative treatments and long-term care needed for patients.

In 2010, a report titled “Assessing Cost-Effectiveness in Prevention” gathered existing evidence to ensure that the present scarce resources are directed as

meticulously as possible to the services provided [31]. This work evaluated 150 preventive health interventions covering mental health, diabetes, tobacco use, alcohol use, nutrition, body weight, physical activity, blood pressure, blood cholesterol, bone mineral density, and many more. The authors concluded that the impact of investing in prevention relies not only on achieving efficient health systems but also on fairer systems, as mentioned previously in Fig. 17.2. The most cost-effective interventions with the most significant population health impact were those that included alcohol, tobacco, unhealthy foods taxation, mandatory salt limits on processed food, and laparoscopic gastric banding as a preventive treatment for individuals with BMI >35 [31].

17.2.3 The Challenges to Person-Centred Prevention

In a perfect world, doctors would not be needed for treating preventable diseases. However, most budgets are allocated towards curing rather than prevention; therefore, most medical specialities praise and adhere to curing roles for prestigious purposes. From the operational perspective, prevention can be task-focused by creating checklists due to current pressures such as low budget, understaffing, and disintegrated services. Nevertheless, public health preventive interventions should not neglect the person since health behaviour and clinical care are person-focused, which make up 50% of the health factors, according to the diagram mentioned previously in Fig. 17.1.

17.2.4 An Environment Conducive to Person-Centred Prevention

17.2.4.1 Inform and Educate About Healthy Choices

One-to-one patient education for prevention should focus on the individual's concerns and the support they may need to keep healthy. It should involve sharing information, identifying medical and non-medical support needs, discussing options, contingency planning, setting goals, documenting the discussion (care plan), and monitoring progress through regular reviews, which the English NHS has set as a priority in 2017 [32]. Another vital part is the patient's mental health, where the services provided can be tailored to one's personal life goals and barriers. The health care provider's role as a face-to-face educator should guide the patient to improve their health literacy while being responsive to the individual patient's needs. Some consider health literacy the primary responsibility of all physicians. Moreover, other health professionals such as nurses, have shown to be very effective in delivering information by avoiding medical jargon, engaging in patient questions, explaining unfamiliar forms, and using "teach-back" as a method to ensure understanding [33]. Teach-back is a technique used by practitioners to ensure that the

patient has understood what care plan they need to abide by, which in turn confirms that everything has been thoroughly and clearly explained.

Mass education for healthy choices must follow marketing principles to make it more attractive. The health sector is competing with the appeal of commercial advertisements for unhealthy products aimed at our population, who have to decide on the best choices for their well-being. Social media marketing adopts retail marketing tools and techniques, such as audience mapping, insight generation, and customer relationship management. It uses them to create marketing and communication campaigns that address critical public health challenges [34]. After understanding the individual's journey, behaviour changing programmes and focused campaigns can be created to inform the public and offer tools to withstand a behavioural change. This transformation can be achieved by supporting an environment encouraged to change, help drive cultural acceptance of healthy behaviours, and in the end, influence policy changes. Making sure to identify the people that are willing to learn, give them a chance, and praise them for their enthusiasm invites more individuals to join and learn more. Health education has the task of modifying individual behaviour and social norms that make healthy choices difficult. Different behaviour change models are used for designing these types of interventions in the context of a policy market. Still, the Capability, Opportunity, Motivation, Behaviour (COM-B) model is probably one of the most popular and widely accepted. Developed by Professor Susan Michie and her colleagues at University College London, the model looks at the interplay between context, policy, and behaviours to help define behavioural change strategies [34]. The model suggests that the interaction between capability, opportunity, and motivation influences behaviour. Capability refers to the individual's psychological and physical capacity, opportunity signifies factors outside the individual such as societal and environmental influences, and motivation shows unconscious processes like emotional responding and analytical decision-making; these three components influence behaviour. This model can be used to understand how to target behavioural change through healthcare education.

17.3 Opportunistic and Systematic Screening

As mentioned above, primary prevention embraces activities to reduce the incidence of a disease, while secondary prevention aims to detect and treat pre-symptomatic disease. On the other hand, tertiary prevention includes activities such as rehabilitation that reduce chronic incapacity, recurrences of an illness, or deterioration and are designed to help the patient return to educational, family, professional, social, and cultural life [35].

Opportunistic screening is a modality of secondary prevention that occurs when a test is offered by a health professional or requested by a patient outside an organised programme. Pharmacists, walk-in centres with nurses, and General Practitioners (GPs) are frequent points of contact. For example, the Royal College of General Practitioners and The Royal College of Australian GPs agree that family physicians and primary care doctors have a crucial role in active prevention, including

opportunistic screening by targeting high-risk patients or groups [35]. Nevertheless, staff in hospitals (secondary care) are equally relevant to this purpose. Although specialist care is predominantly delivered within a reactive model of care, which contradicts the concept of prevention, secondary care doctors should receive appropriate training to perform opportunistic screening, regardless of their speciality. This screening training will be on smoking, obesity, hypertension, high cholesterol level, bone density etc., to enhance prevention measures [36].

Systematic (organised) screening is another form of secondary prevention conceived to detect disease before symptoms develop. These pre-established national programmes are regularly accompanied by law or policy that supports them. The process is similar to sifting people through a sieve with a few picked up in the mesh and is potentially cost saving [37]. Screening tests vary throughout an individual's lifetime, from pregnancy and birth to adult heart diseases and cancers.

An example of systematic screening made person-centred is the NHS Health Check programme, introduced in England in 2009. The programme invites individuals aged 40–74 years without pre-existing cardiovascular disease (CVD), kidney disease, type 2 diabetes, or dementia to perform a health check [38]. A risk assessment including questions about alcohol use, physical activity, smoking status, weight, height, blood pressure, and blood tests for cholesterol and diabetes is performed, and they are given access to lifestyle and health advice tailored to the patients' needs [39].

17.4 Preventable Risk Factors

Risk factors have their causes, sometimes in a complex chain of events (with many entry points for intervention), covering socioeconomic factors, environmental and community conditions, and individual behaviour; however, many are avoidable. Some elements are interconnected; for example, in ischaemic heart disease, cholesterol or high blood pressure act as a relatively direct cause of the disease. Whereas physical inactivity, alcohol, smoking, or fat intake contribute to their development. Hence, these have amenable risk factors, such as education, social status, and income. It has been understood that modifying these background causes is more liable to amplifying effects by influencing multiple proximal causes [35]. Therefore, these preventable risk factors can establish sustained improvements to health if addressed early on.

17.5 Stakeholder Engagement

Stakeholder engagement is an irreplaceable element that creates the canvas to make all of the above possible. At the same time, trust and credibility are required to achieve this. Trust can be gained through good communication or a solid doctor-patient relationship by listening and being open-minded. Credibility is gained through good research and using evidence-based proposals. There are two types of motivators for engagement that can play on the psychological aspect of reward and

Intrinsic Motivators	Extrinsic Motivators
<ul style="list-style-type: none"> • Autonomy • Belonging • Curiosity • Learning 	<ul style="list-style-type: none"> • Badges/ Gold stars • Competition • Fear of failure or punishment • Money/ Rewards

Fig. 17.4 Intrinsic and extrinsic motivators

punishment: intrinsic (part of the stakeholder's constitution), extrinsic (representing a benefit or a menace for the stakeholder), which are illustrated in Fig. 17.4 [40].

17.6 The Public Health Laws

Nothing can be regulated without some laws that are intended as health interventions in what is called Public Health Laws. They define health agencies' powers, duties, boundaries, systems, and regulations impacting health [41]. Nowadays, public health professionals, legal and scientific expertise are more frequently brought together to develop, enforce, and evaluate health-related laws. Public Health Laws are responsible for protecting people from harmful exposures such as smoking, unhealthy food, antibiotics, alcohol, drugs, and even children abuse. These laws can also regulate the influential people known to be the stakeholders in the health system, such as practitioners, registration staff for birth and death, reporters of infectious diseases and many more. These laws should be approached to appeal to the stakeholder's interest and plans to motivate them to start benefiting the whole population. Learning how to negotiate with each entity using the tools listed in the section above and the evidence needed to support each conversation will help reach the desired goal and laws for person-centred prevention in the health systems around the world faster and with all sides on board [42]. This tactic can protect people against biological, chemical, and radiological risks, preventing injuries and diseases.

17.7 Practical Implications

17.7.1 *A Model for Person-Centred Prevention*

A new preventive person-centred model in primary care is needed to achieve better health outcomes, experiences, costs, and higher staff satisfaction. This model is possible only when the broader determinants of health are addressed alongside what the system currently provides [43]. The paradigm shift from curative to preventive is a challenge in the current context of pressures on the health care systems. Under this rationale, a primary care-based model focused on self-care, with minimal additional

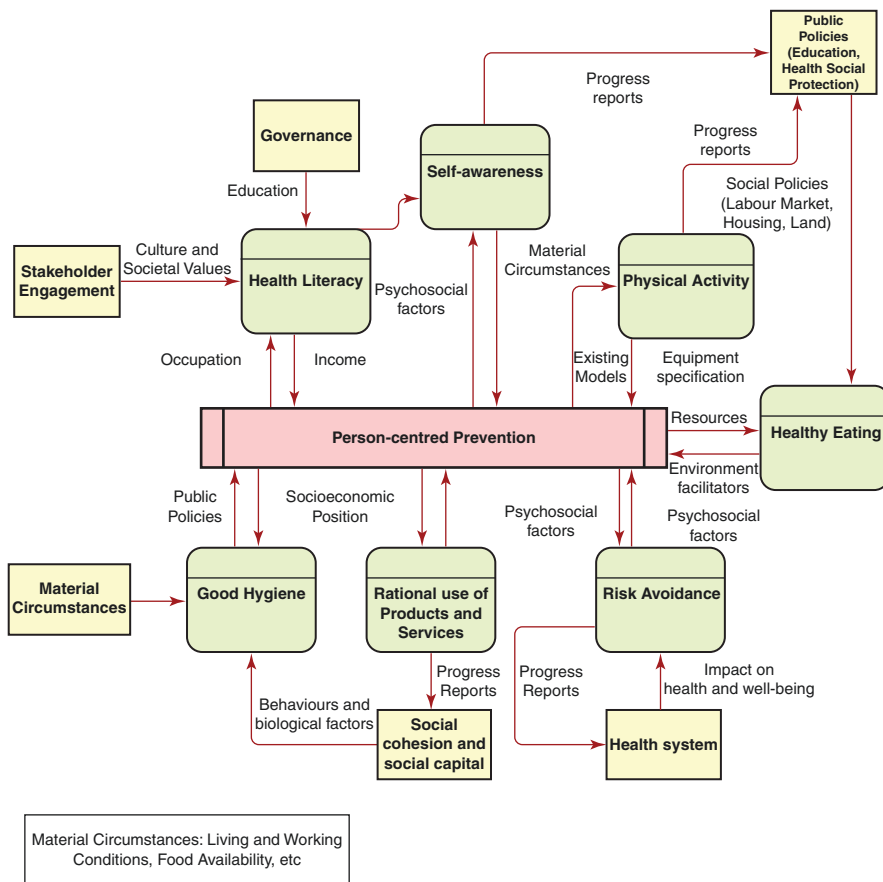


Fig. 17.5 Model for person-centred prevention

resources to an efficient resource redistribution tailored to the individual’s needs, will be proposed.

The model combines the patients’ perspective, the psychosocial context, and shared decision-making between patients and health professionals based on the Seven Pillars of Self Care [44], the WHO Commission on Social Determinants of Health Conceptual Framework [45] and the comments of Roy et al. in 2014 (See Fig. 17.5) [46]. The model highlights the importance of the person as an active participant in health fulfilment.

17.7.2 Assessing the Implementation of Person-Centred Prevention

The necessary steps for being able to evaluate a person-centred prevention intervention are presented in Fig. 17.6.

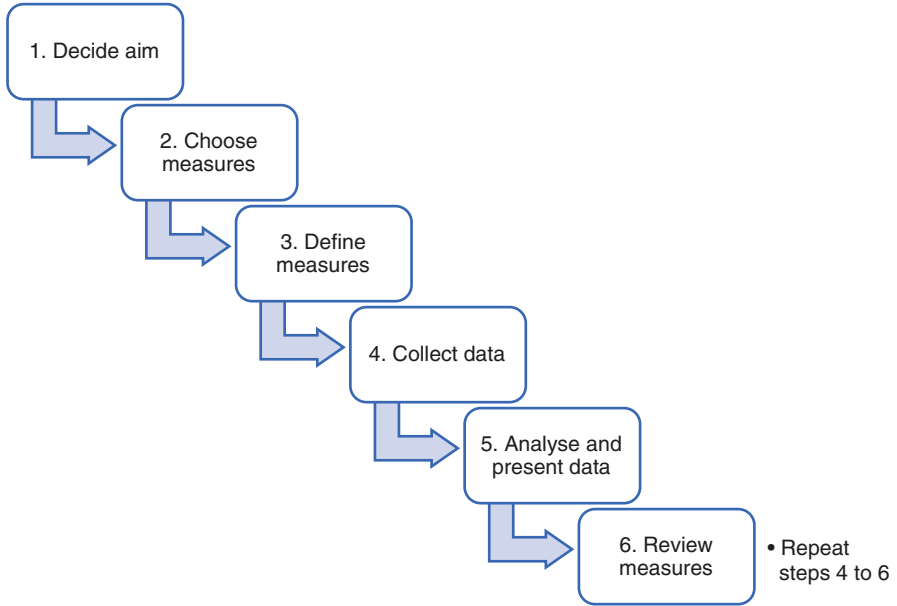
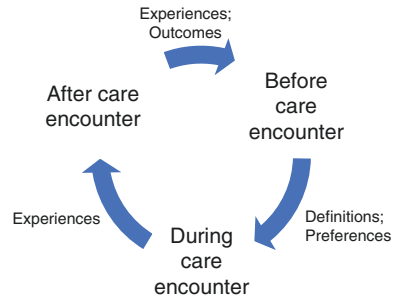


Fig. 17.6 Steps to evaluate person-centered prevention

Fig. 17.7 Measuring different aspects of person-centred care. (Source: de Silva [47])



Source: (Silva, 2014)

Most published research about measuring person-centred care has taken place in a hospital context with a rising primary and community care trend [47]. The main features measured are preferences, experiences such as empathy, communication, self-management, and shared decision-making. Other featured measured outcomes are through patient experience and empowerment, which can be done through surveys or consultations. These can be measured before, during, or after the contact with any preventive services, as seen in Fig. 17.7.

17.8 Discussion

Prevention in public health is proven to be the best measure to prolong life and improve the quality of the individual's and the community's health even though it may take some investments and longer time to implement [48]. The COVID-19 pandemic demonstrated how valuable public health measures are in stopping the transmission, saving lives, and protecting the health service. Social cohesion plays a vital role in patient-centred prevention, expanding its aim to be seen as a means for ensuring the protection of adverse events and the broader concept. In its constitution in 1946, the WHO embraced that concept by defining health not solely as the absence of disease but also a state of complete physical, mental, and social well-being [49].

From this perspective, integrating the predominant biomedical-technological approach that emphasises the biological aspects of both diseases and curative strategies with the social context and developing the concept of social determinants of health is needed. In Alma-Ata year 1978, WHO embraced the goal of "Health for All in the year 2000" with primary health care as a vehicle to achieve this vision of health [50]. These were reiterated in the new Declaration on Primary Care in Astana in 2018 [51] including the call for more integration of public health into primary care. In 2005, WHO created the Commission on Social Determinants of Health, which adopted a conceptual framework based on the Diderichsen model [52], identifying structural and intermediate determinants. The first is the primary producer mechanisms of stratification and social divisions, such as macroeconomic policies, public policies (education, health), social policies, resulting in income differentiation, ethnicity, social class, and schooling. The latter contributes to generating more inequality as modulators than primary causes [45]. Following this, Marmot collected evidence of efficacy in counteracting health inequities and published it in *Fair Society Healthy Lives the Marmot Review* [53]. In this review, the existence of a social health gradient (the lower the social class, the worse their health) and the need to act on the social determinants of health was highlighted with a strengthened role of prevention and to allow people control over their lives (empowerment) as key components. To enable primary care to deliver effective preventive measures, both at the individual and the community level, Rawaf has proposed various models to integrate public health into primary care in a WHO document. These models were suggested to reach preventive care and start taking a broader perspective. Therefore, individual care can be outlined in population outcomes like equity and social cohesion and easily applied to hospital care. Some of the leading models proposed were "public health services and primary care providers work together" and "multidisciplinary training of primary care staff in public health" [54].

Given the above, we feel that change from voluntary to compulsory vaccination should be considered to protect the population in a situation that mirrors the pandemic that has hit the world in 2020. The measles re-emergence due to anti-vaccination parents may eventually force the governments to proceed with compulsory vaccination if prevention is our primary goal. The return of eradicated diseases mentioned in the introduction, like the horrors of polio with the consequent disabling of populations, will be near. When the health system moves towards a more person-centred approach to any health risk, that is when one can see a difference in health status across the world.

17.9 Conclusions

After this discussion on how person-centred prevention can help with the current health sector crisis, it was made clear that a shift in investment from the curative biomedical approach to a preventive approach to care is needed. History has shown that preventive methods can be significant changers to population health outcomes. Many of the current pathologies burdening our health systems now have their origins in our lifestyle, behaviour, and environment.

Smoking, alcohol consumption, and obesity have preventive measures which rely on public policy and rely heavily on self-empowerment and self-care while being highly cost-effective on the whole system. Other factors that require consideration are genetics, climate, occupation, the general environment, access to quality health services, education, and economics. Therefore, screening and testing in high-risk and vulnerable groups are encouraged. Why are physicians and other health professionals not practising prevention at all levels during their daily encounters with patients [55]? Is it because of the lack of training (not part of their training programmes), absence of policy, systems' resistance to change, or lack of incentive?

This chapter has identified elements for a model to person-centred prevention and showed the steps towards assessing the corresponding interventions. Nevertheless, it is important to remember, without stakeholder engagement as a solid foundation, implementation is not feasible. Part of the stakeholder engagement requires public health laws to support person-centred intervention, which requires the training of the health professionals accordingly [42]. We need to legislate, educate, and inoculate!

We hope that this chapter will contribute to greater attention to person-centred illness prevention and health promotion.

Acknowledgements and Disclosures The authors report no conflicts of interest in the preparation of this manuscript.

References

1. Institute of Medicine (US) Committee on Assuring the Health of the Public in the 21st Century. The future of the public's health in the 21st century. The health care delivery system. Washington, DC: National Academies Press (US); 2002.
2. Rasmussen S, Khoury M, del Rio C. Precision public health as a key tool in the COVID-19 response. *JAMA*. 2020;324(10):933–4. <https://doi.org/10.1001/jama.2020.14992>.
3. Stoto M. Population health measurement: applying performance measurement concepts in population health settings. *EGEMS*. 2014;2(4):6. <https://doi.org/10.13063/2327-9214.1132>.
4. Tsiompanou E, Marketos SG. Hippocrates: timeless still. *J R Soc Med*. 2013;106(7):288–92.
5. The National Archives, UK. Coping with Cholera—The National Archives. 2021. <https://www.nationalarchives.gov.uk/education/resources/coping-with-cholera/>.
6. Prince AW. Prevention and health—everybody's business. *J R Coll Gen Pract*. 1976;26(167):460.
7. Historyofvaccines.org. Disease eradication | History of vaccines. 2021. <https://www.historyofvaccines.org/content/articles/disease-eradication>.
8. Gülmezoglu AM, Lawrie TA, Hezelgrave N, Oladapo OT, Souza JP, Gielen M, et al. Interventions to reduce maternal and newborn morbidity and mortality. In R. E. Black (Eds.) et al., Reproductive, maternal, newborn, and child health: disease control priorities, Third Edition (Volume 2). The International Bank for Reconstruction and Development / The World Bank. 2016.
9. National Voices. Person centred care 2020: calls and contributions from health and social care charities. 2014.
10. Cdc.gov. CDC—10 essential public health services—CSTLTS. 2021. <https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html>.
11. Ahmad N, Ellins J, Krelle H, Lawrie M. Person-centred care: from ideas to action. London: The Health Foundation; 2014.
12. Who.int. Primary health care. 2021. <https://www.who.int/news-room/fact-sheets/detail/primary-health-care#:~:text=PHC%20addresses%20the%20broader%20determinants,a%20set%20of%20specific%20diseases>.
13. White S. Water fluoridation—what it is and how it helps dental health—Public health matters. 2021. <https://publichealthmatters.blog.gov.uk/2016/04/13/water-fluoridation-what-it-is-and-how-it-helps-dental-health/>.
14. Leung AM, Braverman LE, Pearce EN. History of U.S. iodine fortification and supplementation. *Nutrients*. 2012;4(11):1740–6. <https://doi.org/10.3390/nu4111740>.
15. Publichealth.hscni.net. Preventing accidents at home. HSC Public Health Agency; 2021. <https://www.publichealth.hscni.net/node/5206>.
16. McClure RJ, Turner C, Peel N, Spinks A, Eakin E, Hughes K. Population-based interventions for the prevention of fall-related injuries in older people. *Cochrane Library*; 2005.
17. Cdc.gov. Advancing early detection. 2021. <https://www.cdc.gov/aging/healthybrain/issue-maps/early-detection.html>.
18. Who.int. WHO | Track 3: Strengthening health systems. 2021. <https://www.who.int/healthpromotion/conferences/7gchp/track3/en/>.
19. Gmc-uk.org. Good medical practice. 2021. <https://www.gmc-uk.org/ethical-guidance/ethical-guidance-for-doctors/good-medical-practice>.
20. Lassi ZS, Kumar R, Bhutta ZA. Community-based care to improve maternal, newborn, and child health. In R. E. Black (Eds.) et al. Reproductive, maternal, newborn, and child health: disease control priorities, Third Edition (Volume 2). The International Bank for Reconstruction and Development / The World Bank. 2016.

21. García-Altés A, Suelves JM, Barbería E. Cost savings associated with 10 years of road safety policies in Catalonia, Spain. (WHO | Who.int.). 2021. <https://www.who.int/bulletin/volumes/91/1/12-110072/en/>.
22. OECD. The territorial impact of COVID-19: managing the crisis across levels of government. 2021. <https://www.oecd.org/coronavirus/policy-responses/the-territorial-impact-of-covid-19-managing-the-crisis-across-levels-of-government-d3e314e1/>.
23. Un.org. Unequal vaccine distribution self-defeating, World Health Organization Chief Tells Economic and Social Council's Special Ministerial Meeting | Meetings Coverage and Press Releases. 2021. <https://www.un.org/press/en/2021/ecosoc7039.doc.htm>.
24. Rawaf S, Quezada Yamamoto H, Rawaf D. Unlocking towns and cities: COVID-19 exit strategy. *East Mediterr Health J.* 2020;26(5):499–502. <https://doi.org/10.26719/emhj.20.028>. PMID: 32538441.
25. Sartorius N. Preface. In: Christodoulou GN, Lecic-Tosevski D, Kontaxakis VP, editors. *Issues in preventive psychiatry*, vol. VII. Basel: Karger; 1999.
26. Christodoulou G, Van Staden C, Jousset D, Schwartz M, Mishara A. Ethics in person-centered psychiatry. In: Mezzich JE, Botbol M, Christodoulou GN, Cloninger CR, Salloum IM, editors. *Person-centred psychiatry*. Cham: Springer; 2016.
27. Mezzich J, Schmolke M. The relevance of comprehensive clinical diagnosis to prevention and health promotion. In: Christodoulou GN, Lecic-Tosevski D, Kontaxakis VP, editors. *Issues in preventive psychiatry*. Basel: Karger; 1999.
28. Christodoulou N, Lecic-Tosevski D, Kallivayalil R. Person-centered prevention in psychiatry. In: Mezzich JE, Botbol M, Christodoulou GN, Cloninger RC, editors. *Salloum IM person-centered psychiatry*. Cham: Springer; 2016.
29. Christodoulou G, Rutz W, Herrmann H, Christodoulou N, Schmolke M. Person-centered mental health promotion and public health perspectives. In: Mezzich JE, Botbol M, Christodoulou GN, Cloninger RC, Salloum IM, editors. *Person-centered psychiatry*. Cham: Springer; 2016.
30. Ferguson B. "Investing in prevention: the need to make the case now," UK Health Security Agency. Gov.uk, 22 February. 2016. Available at: <https://ukhsa.blog.gov.uk/2016/02/22/investing-in-prevention-the-need-to-make-the-case-now/>.
31. Vos T, Carter R, Barendregt J, Mihalopoulos C, Veerman L, Magnus A, et al. Assessing cost-effectiveness in prevention. 2010.
32. NHS England. Involving people in their own health and care: statutory guidance for clinical commissioning groups and NHS England. NHS England; n.d.
33. Paterick T, Patel N, Tajik AJ, Chandrasekaran K. Improving health outcomes through patient education and partnerships with patients. *Proc (Bayl Univ Med Cent)*. 2017;30(1):112–3.
34. Public Health England. Social marketing strategy 2017 to 2020. Public Health England; 2020.
35. Boyce T, Peckham S, Hann A, Trenholm S. A pro-active approach. *Health promotion and illness prevention*. London: The King's Fund; 2010.
36. Bauer U, et al. Prevention of chronic disease in the 21st century: elimination of the leading preventable causes of premature death and disability in the USA. *Lancet*. 2014;384(9937):45–52.
37. Labeit A, Peinemann F, Baker R. Utilisation of preventative health check-ups in the UK: findings from individual-level repeated cross-sectional data from 1992 to 2008. *BMJ Open*. 2013;3(12):e003387. <https://doi.org/10.1136/bmjopen-2013-003387>.
38. Harte E, MacLure C, Martin A, Saunders CL, Meads C, Walter FM, et al. Reasons why people do not attend NHS Health Checks: a systematic review and qualitative synthesis. *Br J Gen Pract*. 2018;68(666):e28–35. <https://doi.org/10.3399/bjgp17X693929>.
39. Woringer M, Cecil E, Watt H, Chang K, Hamid F, Khunti K, et al. Evaluation of community provision of a preventive cardiovascular programme—the National Health Service Health Check in reaching the under-served groups by primary care in England: cross sectional observational study. *BMC Health Serv Res*. 2017;17
40. Makki A, Abid M. Influence of intrinsic and extrinsic motivation on employee's task performance. *Stud Asian Soc Sci*. 2017;4(1):38–43.

41. Géraldine M-S, Feng-jen T, Anderson E, Kastler F, Sprumont D, Burris S. National public health law: a role for WHO in capacity-building and promoting transparency. World Health Organization; 2016. <https://www.who.int/bulletin/volumes/94/7/15-164749/en/>.
42. Toebes B, Ferguson R, Markovic MM, Nnamuchi O. The right to health: a multi-country study of law, policy and practice. The Hague: T.M.C. Asser Press; 2014.
43. Santana MJ, Manalili K, Jolley RJ, Zelinsky S, Quan H, Lu M. How to practice person-centred care: a conceptual framework. *Health Expect*. 2018;21(2):429–40.
44. International Self-care Foundation. The seven pillars of self-care framework. 2011. <https://isfglobal.org/seven-pillars-self-care-framework/>.
45. Solar O, Irwin A. A conceptual framework for action on the social determinants of health. Geneva: World Health Organization; 2010.
46. Mathieu R, Levasseur M, Couturier Y, Lindström B, Génèreux M. The relevance of positive approaches to health for patient-centered care medicine. Elsevier; 2014.
47. de Silva D. Helping measure person-centred care. London: The Health Foundation; 2014.
48. Marks L, Hunter DJ, Alderslade R. Strengthening public health capacity and services in Europe. [ebook]. WHO Regional Office for Europe; 2011. https://www.euro.who.int/__data/assets/pdf_file/0007/152683/e95877.pdf.
49. World Health Organization. Official records of the World Health Organization. New York: International Health Conference; 1946.
50. WHO. Declaration of Alma-Ata International Conference on Primary Health Care. Geneva: Alma-Ata, USSR; 1978. http://www.who.int/publications/almaata_declaration_en.pdf.
51. WHO, UNICEF. Declaration of Astana. Geneva: WHO; 2018.
52. Diderichsen F, Evans T, Whitehead M. The social basis of disparities in health. In: Evans T, et al., editors. *Challenging inequities in health: from ethics to action*. New York: Oxford UP; 2001.
53. Marmot M, Allen J. Social determinants of health equity. *Fair society healthy lives: The Marmot review*. *AJPH*. 2014;104(4):S517–9.
54. Rawaf S, et al. Primary health care: closing the gap between public health and primary care through integration. Geneva: World Health Organization; 2018.
55. Levine S, Malone E, Lekiachvili A, Briss P. Health care industry insights: why the use of preventive services is still low. *preventing chronic disease*. 2019;16:E30. <https://doi.org/10.5888/pcd16.180625>.